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Reply by Authors to M. J. DeSantis, L. S. Fletcher, and L. S. Galowin

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De SANTIS, Fletcher, and Galowin touched upon a few important points related to our paper.[1] Some of these points are actually items that are being investigated in a further experimental study in the authors' laboratory. To obtain an improved analysis of the flow behavior in the condenser section, laser Doppler velocity measurements will be performed for the experimental porous plate model. The results of this work will be published fairly soon.

Even though a constant suction velocity boundary condition is characteristic of similarity solutions, this does not mean that a constant v_0 leads to similar velocity profiles. In the computations the complete two-dimensional momentum equations and the continuity equation have been solved. The results as shown in Fig. 7 clearly indicate that this method does not lead to similar velocity profiles. As the computed transverse pressure gradients were found to be very small compared to the axial ones, the pressure profiles in Fig. 8 are shown as a function of the axial position only. The authors feel that any computations based on the a priori assumption of zero transverse pressure gradients lead to incorrect results, especially at higher Re_r values.

The authors agree with the reviewers' comment that many apparently suitable boundary conditions can lead to flow separation at stagnation points in suction flow, but not all are physically realistic. In the comparison of the results of the computations with the laboratory model, therefore, special care has been taken to obtain a virtually constant suction velocity in the suction section of the experimental model. A very-low-porosity sintered stainless-steel wall with pore size of about 2 μm has been used. The flow resistance of the sintered plate was so high that the pressure difference along the condenser section was always less than 0.3% of the pressure drop across the sintered plate. The uniformity of v_0 thus depended only on the uniformity of the porosity of the sintered plate and that was better than 1%.

The sharp pressure increase as measured near the end of the condenser section in the experimental model for $Re_r = 43.2$ indeed suggests only the possibility of the existence of a recirculation zone. The planned velocity measurements will show whether recirculation is present or not.

In fact, the computer program is not limited to constant v_0 and Darcy's law could be included to get accurate results for low-porosity walls as well. These results could be used for many other practical situations.

References

[1] van Ooijen, H. and Hoogendoorn, C. J., "Vapor Flow Calculations in a Flat-Plate Heat Pipe," *AIAA Journal*, Vol. 17, Nov. 1979, pp. 1251-1259.

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Errata: Adverse Pressure Gradient Effects on Supersonic Boundary-Layer Turbulence

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An error has been noted in the legend of Fig. 5. The legend should read:

RAMP 3
XSTA (cm)
+ −0.63
• 7.62

instead of

RAMP 3
XSTA (cm)
• −0.63
+ 7.62

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Errata: Evolution of a Detonation Wave in a Cloud of Fuel Droplets: Part II. Influence of Fuel Droplets

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[AIAAJ, **18**, pp. 1233-1236 (1980)]

On page 1235 three figures were mistakenly interchanged. Figure 5 is located over the caption for Fig. 7, Fig. 6 is located over the caption for Fig. 5, and Fig. 7 is located over the caption for Fig. 6.

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